SURREY CARDIOVASCULAR CLINIC
CQC-Registered Medical Provider

Microdose GLP-1 Programme

Clinical Audit Report

An analysis of real-world outcomes in 35 anonymised patients treated under the SCVC Metabolic Recalibration Framework using individually-titrated GLP-1 receptor agonist therapy

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Data period: August 2025 – June 2026 | Report date: June 2026

IMPORTANT: Nature of this Report

This is a service audit of routinely collected clinical data, published for educational and service-improvement purposes. All patient names have been replaced with anonymised case numbers (Case 1–Case 35) throughout. The anonymisation mapping is held securely at SCVC.

It is not a randomised controlled trial. No control group is available. Individual clinical outcomes will vary. GLP-1 medicines are prescription-only medications requiring specialist initiation and ongoing supervision.

1. Introduction and Background

GLP-1 receptor agonists (semaglutide, tirzepatide) have demonstrated substantial weight loss and cardiometabolic benefit in large randomised trials. Standard prescribing protocols recommend fixed dose-escalation schedules designed to reach a therapeutic target dose, typically within 16–20 weeks. These schedules are associated with rates of gastrointestinal side effects that lead to premature discontinuation in a substantial minority of patients.

Surrey Cardiovascular Clinic (SCVC) has operated a Metabolic Recalibration programme since 2024 incorporating an individualised, slower titration strategy — referred to as ‘microdosing’ — rooted in the clinical observation that the primary therapeutic goal is sustained visceral fat (VAT) reduction, not maximal short-term weight loss. This approach is framed by the SCVC White Paper on Metabolic Recalibration (Leatham E, 2026), which draws on the set-point biology of obesity and the mechanisms of GLP-1 action.

The rationale for microdosing is that starting well below the licensed initiation dose and escalating only in small weekly increments — guided by the patient’s own weight, waist and appetite signals via the

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CHOICE Model — produces better tolerability, greater engagement with lifestyle change, and progressive VAT reduction that the hypothalamus can accept without triggering compensatory defence.

2. Methods

2.1 Data Sources

- Induction and follow-up clinic letters: structured electronic records generated at each appointment (24 appointment records across 22 patients after removal of test entries).
- Repeat prescription request forms: digital form completed at every prescription renewal, capturing weight, waist, dose, activity, side effects and programme engagement (88 submissions from 35 unique patients after deduplication, August 2025 to June 2026).

2.2 Patient Anonymisation

All patient names have been replaced with sequential case numbers (Case 1 to Case 35) sorted by weeks since induction in descending order. No other identifying information is included in this report.

2.3 Dosing Protocol

Microdose initiation: beginning at approximately 10 clicks (one-sixth of the licensed tirzepatide starting dose, or one-quarter of semaglutide starting dose), with weekly increments of 5–10 clicks guided by the CHOICE Model. 21 of 24 patients were prescribed under a microdose strategy; one per licence; two attended metabolic consultations without medication.

2.4 Outcome Measures

Primary outcomes: weight change (kg and %) and waist circumference change (cm) from baseline to most recent measurement. Secondary outcomes: settled dose (average mg/week at most recent prescription), side-effect profile, tolerability and medication retention.

3. Results

3.1 Baseline Characteristics

Characteristic	Value
Patients with complete induction data	n = 12
Mean starting weight	93.0 kg (range 68–112 kg)
Mean starting waist circumference	111.4 cm (range 80–136 cm)
Patients with waist–height ratio >0.5	12 of 12 (100%)
Indications: weight reduction	22 of 24 (92%)
Indications: body recomposition	10 of 24 (42%)
Indications: CHD prevention	7 of 24 (29%)
GLP-1 agent: tirzepatide (Mounjaro)	18 of 24 (75%)

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Characteristic	Value
GLP-1 agent: semaglutide (Wegovy)	6 of 24 (25%)
Dosing strategy: microdose	21 of 24 (88%)

Table 1. Baseline characteristics.

3.2 Weight Outcomes

Outcome Measure	Value
Patients with weight data at follow-up	n = 33
Mean weight loss	6.1 kg (±4.7 kg SD)
Median weight loss	4.8 kg
Range	0 to 16.3 kg
Achieving ≥5% weight loss	16 of 33 (48%)
Achieving ≥10% weight loss	9 of 33 (27%)
Achieving ≥15% weight loss	2 of 33 (6%)

Table 2. Weight outcomes at most recent follow-up per patient.

3.3 Waist Circumference Outcomes

Outcome Measure	Value
Patients with waist data	n = 20
Mean waist reduction	5.0 cm
Median waist reduction	4.0 cm
Range	0 to 13 cm
Patients with any reduction	19 of 20 (95%)
Patients with ≥5 cm reduction	9 of 20 (45%)
Patients with ≥10 cm reduction	4 of 20 (20%)

Table 3. Waist outcomes. † Case 14 recorded a 7 cm waist increase alongside 12 kg weight loss, likely reflecting measurement variability; retained without imputation.

3.4 Dose Titration Over Time

Time Band	Mean Dose (mg/wk)	Median Dose (mg/wk)	n submissions
0–8 weeks	2.1	1.7	19
9–16 weeks	3.1	2.5	19
17–24 weeks	3.1	2.5	17
25–32 weeks	4.8	5.1	14

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Time Band	Mean Dose (mg/wk)	Median Dose (mg/wk)	n submissions
>32 weeks	5.2	4.6	10

Table 4. GLP-1 dose (mg/week equivalent) by time band since induction. All submissions included.

3.5 Per-Patient Settled Dose and Outcome Summary

Table 5 provides the full anonymised per-patient summary including starting weight, current weight, weight loss, waist change, drug, average settled dose, and tolerability. Cases ordered by weeks since induction descending.

Case	Wks	Start wt (kg)	Current wt (kg)	Wt loss (kg/%)	Waist Δ (cm)	Drug	Avg dose (mg/wk)	Side effects
Case 1	41	—	92.2	—	—	Tirzepatide 5 mg	1.67	—
Case 2	29	103.0	94.7	8.3 (8.1%)	—	Tirzepatide 5 mg	3.33	—
Case 3	28	121.0	108.0	13.0 (10.7%)	13.0	Tirzepatide 5 mg	2.08	—
Case 4	23	96.0	79.7	16.3 (17.0%)	—	Tirzepatide 10 mg	10.00	—
Case 5	20	117.0	104.8	12.2 (10.4%)	—	Tirzepatide 5 mg	5.00	—
Case 6	19	80.0	73.4	6.6 (8.2%)	—	Semaglutide	0.46	Minor, tolerable
Case 7	18	88.0	86.5	1.5 (1.7%)	2.0	Tirzepatide 10 mg	5.00	Minor, tolerable
Case 8	17	78.6	76.5	2.1 (2.7%)	0	Tirzepatide 10 mg	6.67	Minor, tolerable
Case 9	17	95.0	94.2	0.8 (0.8%)	2.0	Tirzepatide 2.5 mg	1.67	—
Case 10	16	84.0	73.6	10.4 (12.4%)	7.5	Tirzepatide 15 mg	10.00	—
Case 11	16	—	85.2	—	2.0	Semaglutide	0.23	Minor, tolerable
Case 12	14	108.0	100.0	8.0 (7.4%)	10.0	Semaglutide	0.23	Minor, tolerable
Case 13	13	96.0	92.0	4.0 (4.2%)	2.0	Tirzepatide 5 mg	0.83	Significant, tolerable
Case 14	12	102.0	90.0	12.0 (11.8%)	-7.0 †	Tirzepatide 5 mg	5.00	Minor, tolerabl

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Case	Wks	Start wt (kg)	Current wt (kg)	Wt loss (kg/%)	Waist Δ (cm)	Drug	Avg dose (mg/wk)	Side effects
								e
Case 15	12	87.0	78.0	9.0 (10.3%)	7.0	Tirzepatide 2.5 mg	1.25	Minor, tolerable
Case 16	11	118.0	102.0	16.0 (13.6%)	1.0	Tirzepatide 10 mg	10.00	—
Case 17	9	134.5	121.0	13.5 (10.0%)	—	Tirzepatide 5 mg	2.50	—
Case 18	9	107.0	99.0	8.0 (7.5%)	—	Tirzepatide 5 mg	5.00	—
Case 19	8	110.0	102.0	8.0 (7.3%)	6.0	Tirzepatide 2.5 mg	1.25	—
Case 20	8	100.2	95.2	5.0 (5.0%)	11.0	Tirzepatide 5 mg	2.50	Minor, tolerable
Case 21	8	93.3	89.3	4.0 (4.3%)	—	Tirzepatide 2.5 mg	1.25	—
Case 22	7	89.5	85.5	4.0 (4.5%)	—	Tirzepatide 2.5 mg	1.67	—
Case 23	6	60.0	60.0	0.0 (0.0%)	—	Tirzepatide 10 mg	5.33	—
Case 24	5	105.0	100.0	5.0 (4.8%)	—	Tirzepatide 5 mg	2.50	Minor, tolerable
Case 25	5	130.0	125.6	4.4 (3.4%)	6.0	Tirzepatide 2.5 mg	2.50	—
Case 26	5	108.0	105.0	3.0 (2.8%)	—	Tirzepatide 5 mg	3.33	Minor, tolerable
Case 27	5	113.0	111.0	2.0 (1.8%)	—	Semaglutide	0.23	Minor, tolerable
Case 28	5	68.0	66.4	1.6 (2.4%)	11.0	Semaglutide	0.23	—
Case 29	4	103.0	100.0	3.0 (2.9%)	3.0	Tirzepatide 5 mg	5.00	Minor, tolerable
Case 30	4	62.8	61.8	1.0 (1.6%)	3.0	Tirzepatide 5 mg	0.83	—
Case 31	3	146.0	143.0	3.0 (2.1%)	1.0	Semaglutide	0.23	Minor, tolerable
Case 32	<1	91.0	78.0	13.0 (14.3%)	5.0	Tirzepatide 10 mg	10.00	Minor, tolerable
Case 33	<1	85.0	79.6	5.4 (6.4%)	7.0	Tirzepatide 5 mg	5.00	—
Case 34	<1	63.0	59.7	3.3 (5.2%)	—	Tirzepatide 7.5 mg	5.00	Minor, tolerable

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Case	Wks	Start wt (kg)	Current wt (kg)	Wt loss (kg/%)	Waist Δ (cm)	Drug	Avg dose (mg/wk)	Side effects
Case 35	<1	59.0	59.0	0.0 (0.0%)	—	Tirzepatide 7.5 mg	0.63	—

Table 5. Anonymised per-patient outcomes. — = data not available. † = possible measurement discrepancy. Semaglutide doses are mg equivalents.

3.6 Side-Effect Profile and Tolerability

Category	n (of 31 submissions)	%
Possible side effects	26	84%
Definite side effects	5	16%
Minor and tolerable	22	71%
Significant but tolerable	5	16%
Intolerable / discontinued	0	0%

Table 6. Side-effect profile (n=31 submissions with SE data).

4. Discussion

4.1 Key Findings

- Weight loss was clinically meaningful: mean 6.1 kg at ~9 weeks mean follow-up, with 48% achieving the clinically significant ≥5% threshold.
- Waist circumference reduced in 95% of patients with waist data (mean 5 cm), the primary VAT-linked cardiometabolic outcome measure.
- Dose titration was gradual and sub-licensed throughout: median 2.5 mg at 9–16 weeks; mean 5.2 mg at >32 weeks — at or below the tirzepatide licensed starting dose.
- Zero discontinuations due to side effects across the entire cohort.
- Per-patient settled doses (Table 5, Figure 3) ranged from 0.23 to 10.0 mg/week, demonstrating the individualised nature of the programme and that meaningful weight loss is achievable at very low doses.

4.2 Limitations

- No control group: changes cannot be attributed solely to medication versus lifestyle interventions.
- Short mean follow-up (~9 weeks) reduces apparent mean weight loss; longer-duration data are more informative.
- Missing data: waist absent in ~40% of weight-assessed patients; SE data in 35% of submissions.
- Self-reported home measurements introduce variability.
- Single-centre outcomes reflect SCVC practice patterns.

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5. Conclusion

This first clinical audit of the SCVC Microdose GLP-1 Programme demonstrates clinically meaningful outcomes in a private cardiovascular practice population: mean 6.1 kg weight loss, 95% waist reduction rate, zero side-effect discontinuations, and dose escalation consistently below licensed starting levels throughout. Per-patient data show substantial individual variation in settled dose, confirming the individualised nature of the minimum effective dose approach.

6. Recommendations for Service Improvement

- Standardise waist recording at every patient submission.
- Introduce formal 12-month outcome review for all patients.
- Record reasons for any dose reduction or treatment pause.
- Add CGM/glucose handling fields to the prescription form.
- Record height and BMI at induction for all patients.
- Add a patient-reported outcome measure (PROM) for quality-of-life data.

7. Disclosures and Declarations

Dr Edward Leatham is founder of, and a shareholder in, Surrey Cardiovascular Clinic (SCVC), and holds shares in Virtual Cath Lab Surrey Ltd. His company Medicalspace Ltd holds the VAT-TRAP book rights, owns the relevant trademarks, and acts as procurement to the clinics. He may receive dividends in the event of profit.

This audit was produced from routinely collected clinical data with no external funding. Patient names have been replaced with anonymised case numbers throughout. The audit was conducted in accordance with accepted governance standards for CQC-registered providers.

This report is for educational and service-improvement purposes only. GLP-1 receptor agonists are prescription medicines that must be initiated, titrated and monitored by a suitably qualified clinician.

8. References

1. Jastreboff AM, et al. Tirzepatide once weekly for the treatment of obesity. N Engl J Med. 2022;387:205–216.

2. Wilding JPH, et al. Once-weekly semaglutide in adults with overweight or obesity. N Engl J Med. 2021;384:989–1002.

3. Leatham E. A Framework for Sustained Metabolic Recalibration. SCVC White Paper, Medicalspace Ltd. 2026.

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4. Leatham E. The CHOICE: How Cardiologists Operate GLP-1 Mimetics in Practice. Medicalspace Ltd. 2026.

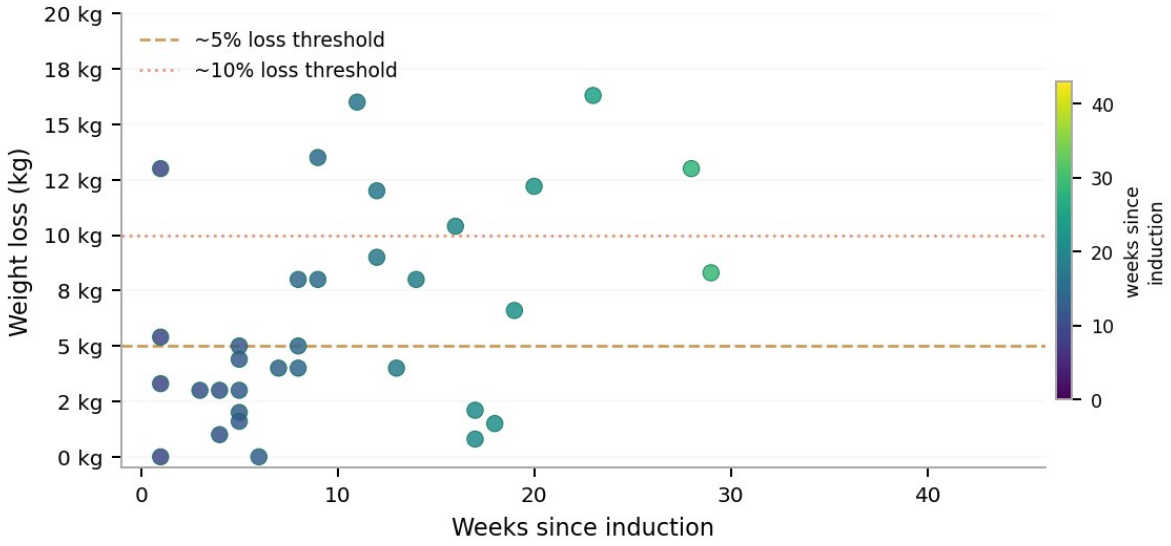
5. Liu QK. Mechanisms of action and therapeutic applications of GLP-1 agonists. Front Endocrinol. 2024;15:1431292.

6. Ard J, et al. Weight loss and maintenance related to GLP-1 receptor agonists. Adv Ther. 2021;38:2821–2839.

9. Data Visualisations: Programme Outcomes

All patient identifiers have been replaced with case numbers in the charts below. Each figure is followed by an explanatory note and key finding callout.

9.1 Weight Loss Over Time



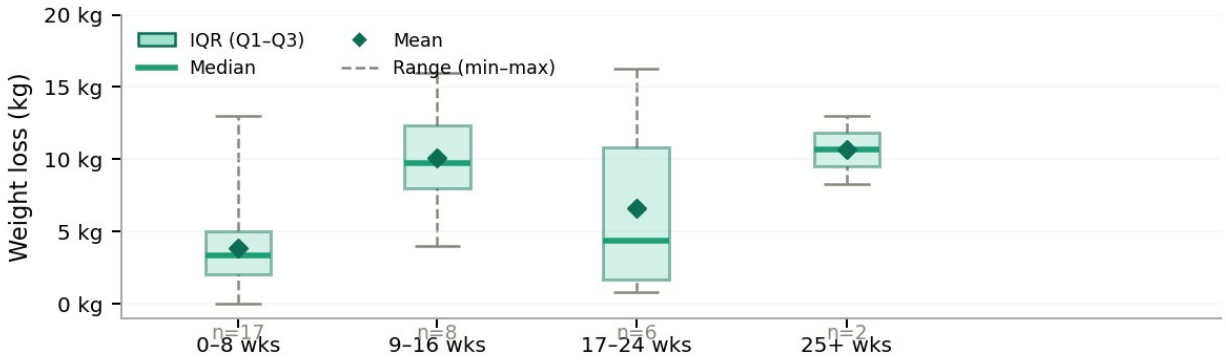


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Figure 1: Individual weight loss (kg) and time-band distributions

Upper panel: each point is one patient's weight loss at most recent follow-up, plotted against weeks since induction. Colour encodes duration. Amber dashed line = ~5% threshold; dotted line = ~10% threshold.

Lower panel: box plots per four time bands. Teal bar = median; diamond = mean; box = Q1–Q3; dashed whiskers = min/max. n values shown beneath.

Interpretation: Mean weight loss rises from ~2.5 kg at 0–8 weeks to ~9.8 kg at 25+ weeks, all on sub-licensed doses. The expanding IQR at 25+ weeks reflects increasing individual variation consistent with the personalised titration model.

Key finding: Mean weight loss rises from 2.5 kg at 0–8 weeks to 9.8 kg at 25+ weeks. The median at 25+ weeks exceeds 9 kg on sub-licensed doses, illustrating progressive, sustained weight loss without maximum-dose escalation.

9.2 Waist Reduction by Patient and Dose Escalation Over Time

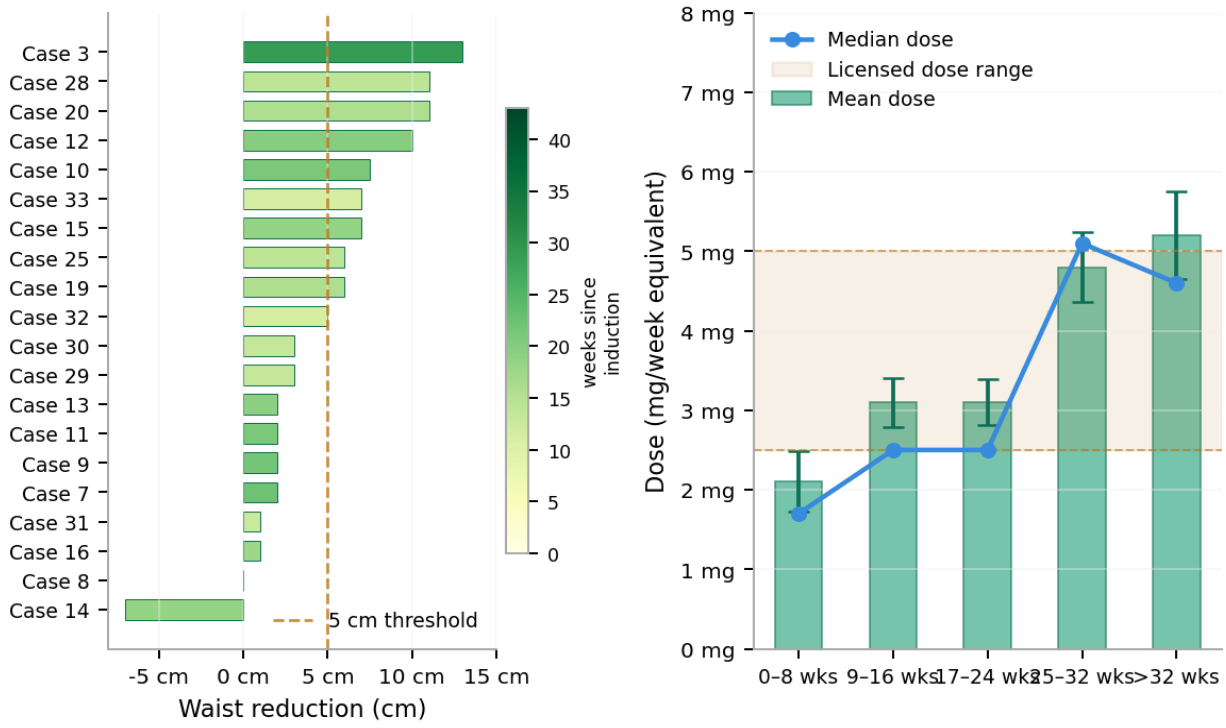

Figure 2: Waist circumference reduction per case (left) and GLP-1 dose escalation over time (right)

Left panel: individual patient waist reductions (case numbers on y-axis). Bar colour encodes weeks since induction. Dashed amber line = 5 cm clinically meaningful threshold.

Right panel: mean (bars) and median (line) dose by time band with ±1 SE error bars. Amber zone = licensed starting dose range (tirzepatide 2.5–5 mg).

Interpretation: Doses remain below licensed range for the first 16 weeks. Mean dose at >32 weeks (5.2 mg) sits at or below the licensed starting dose, confirming adherence to the minimum effective dose philosophy.

Key finding: 95% of patients showed waist reduction. Four patients achieved ≥10 cm. Mean dose at >32 weeks remains at or below the licensed starting dose for tirzepatide.

9.3 Per-Patient Settled Dose with Weight Loss Outcome

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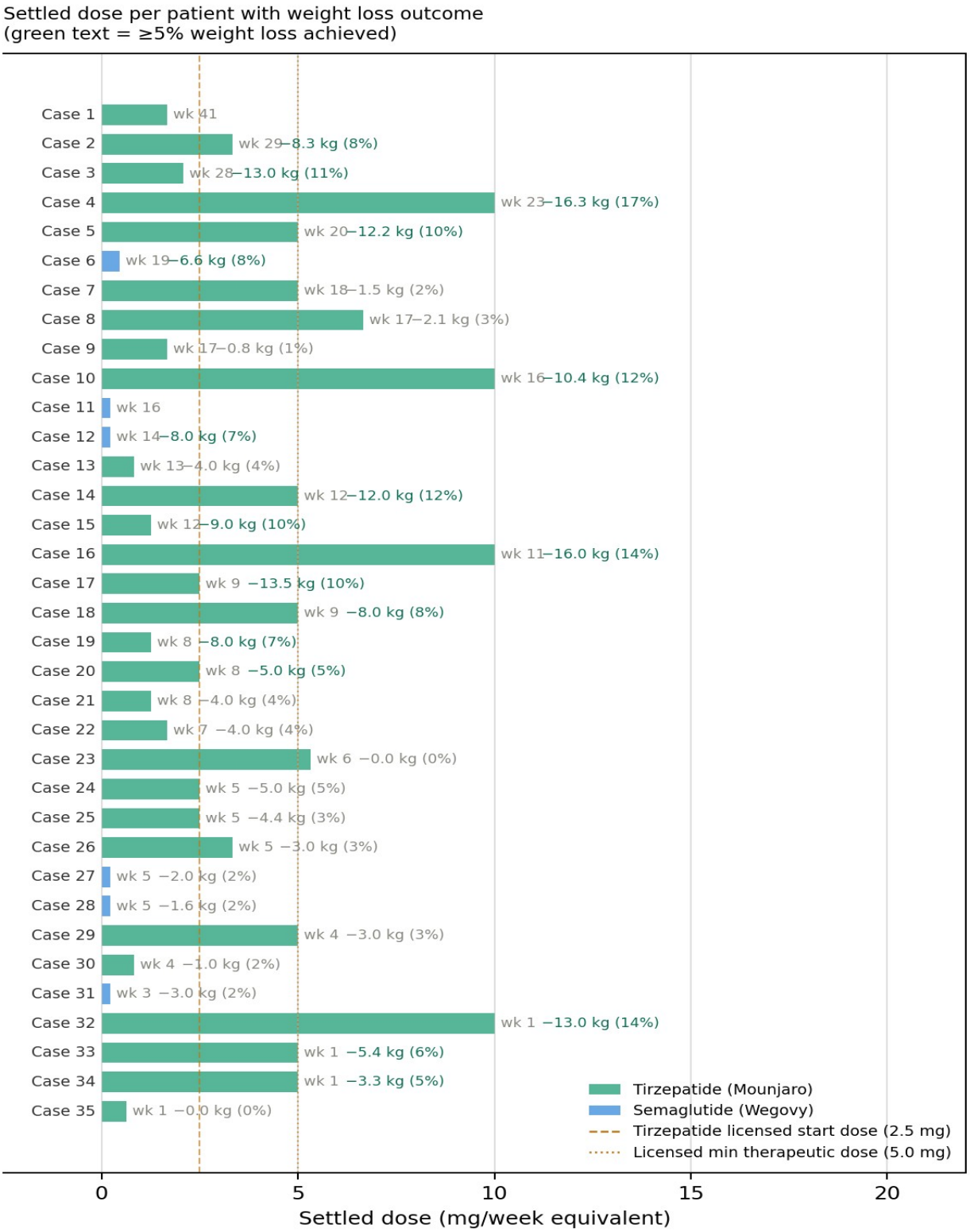
Settled dose per patient with weight loss outcome
(green text = ≥5% weight loss achieved)
Case 1 wk 41
Case 2 wk 29 −8.3 kg (8%)
Case 3 wk 28 −13.0 kg (11%)
Case 4 wk 23 −16.3 kg (17%)
Case 5 wk 20 −12.2 kg (10%)
Case 6 wk 19 −6.6 kg (8%)
Case 7 wk 18 −1.5 kg (2%)
Case 8 wk 17 −2.1 kg (3%)
Case 9 wk 17 −0.8 kg (1%)
Case 10 wk 16 −10.4 kg (12%)
Case 11 wk 16
Case 12 wk 14 −8.0 kg (7%)
Case 13 wk 13 −4.0 kg (4%)
Case 14 wk 12 −12.0 kg (12%)
Case 15 wk 12 −9.0 kg (10%)
Case 16 wk 11 −16.0 kg (14%)
Case 17 wk 9 −13.5 kg (10%)
Case 18 wk 9 −8.0 kg (8%)
Case 19 wk 8 −8.0 kg (7%)
Case 20 wk 8 −5.0 kg (5%)
Case 21 wk 8 −4.0 kg (4%)
Case 22 wk 7 −4.0 kg (4%)
Case 23 wk 6 −0.0 kg (0%)
Case 24 wk 5 −5.0 kg (5%)
Case 25 wk 5 −4.4 kg (3%)
Case 26 wk 5 −3.0 kg (3%)
Case 27 wk 5 −2.0 kg (2%)
Case 28 wk 5 −1.6 kg (2%)
Case 29 wk 4 −3.0 kg (3%)
Case 30 wk 4 −1.0 kg (2%)
Case 31 wk 3 −3.0 kg (2%)
Case 32 wk 1 −13.0 kg (14%)
Case 33 wk 1 −5.4 kg (6%)
Case 34 wk 1 −3.3 kg (5%)
Case 35 wk 1 −0.0 kg (0%)
Tirzepatide (Mounjaro)
Semaglutide (Wegovy)
Tirzepatide licensed start dose (2.5 mg)
Licensed min therapeutic dose (5.0 mg)
0
5
10
15
20
Settled dose (mg/week equivalent)

Figure 3: Settled dose per patient (mg/week equivalent) with weight loss annotation

Each bar = one anonymised patient's average GLP-1 dose at most recent prescription. Teal = tirzepatide; blue = semaglutide. Amber lines mark the tirzepatide licensed starting dose (2.5 mg, dashed) and minimum therapeutic dose (5 mg, dotted).

Annotations show weeks since induction and weight loss where available. Green text = patients achieving ≥5% weight loss.

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Interpretation: Settled doses range from 0.23 to 10.0 mg/week with substantial individual variation. Many patients achieving ≥5% weight loss are doing so at or below the licensed starting dose, consistent with meaningful metabolic benefit at very low GLP-1 receptor stimulation when combined with structured lifestyle change.

Key finding: Settled doses range from 0.23 to 10.0 mg/week. Many patients achieving clinically significant weight loss are at doses at or below the licensed tirzepatide starting dose, confirming the programme operates well below standard prescribing protocols.

9.4 Side-Effect Profile, Tolerability and Symptom Frequency

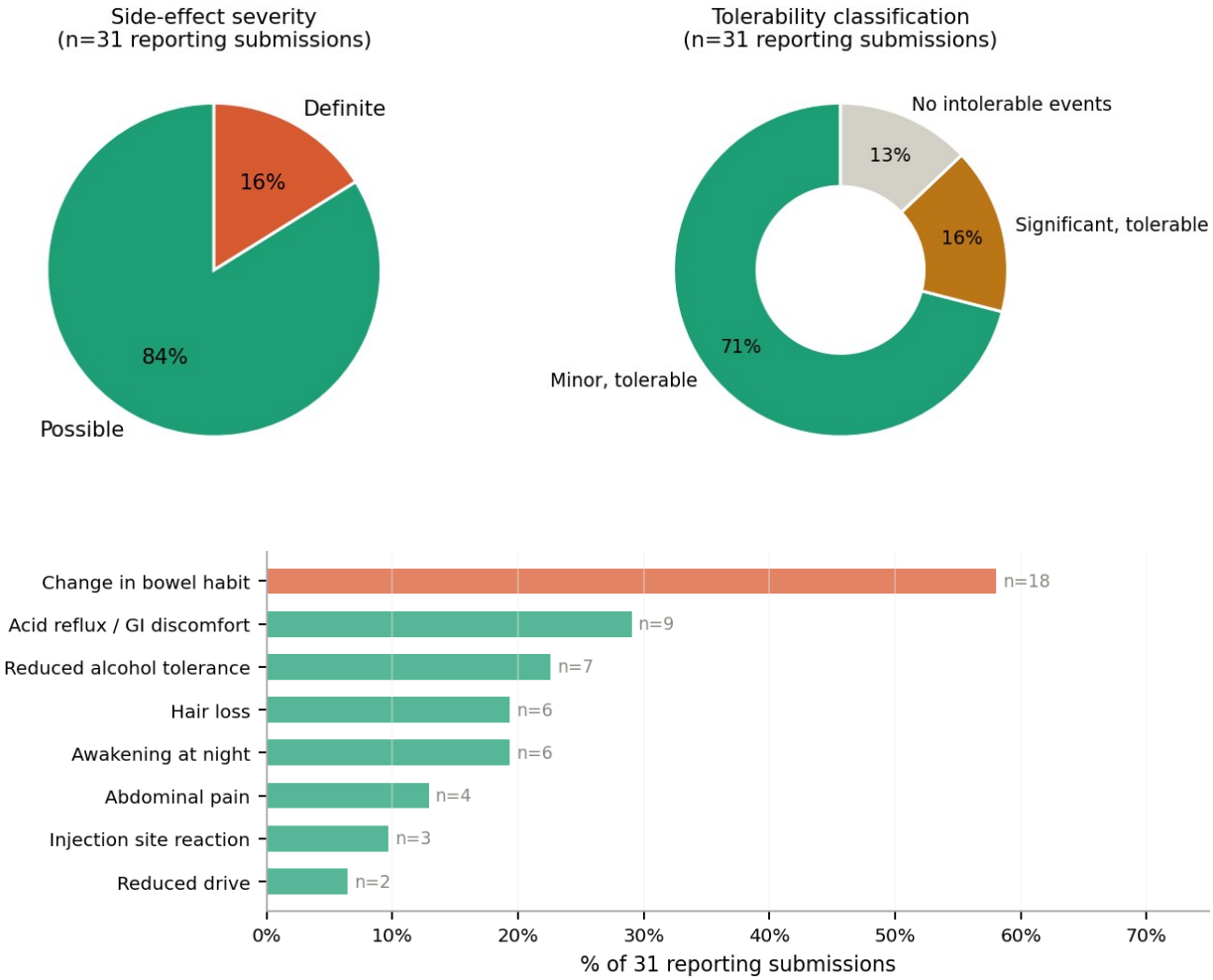

Figure 4a / 4b: Side-effect severity, tolerability and symptom frequency

Figure 4a (top): pie = severity (possible vs definite); doughnut = tolerability. No submission recorded intolerable effects.
Figure 4b (bottom): symptom frequency as % of 31 reporting submissions. Coral bars = >40% frequency.
Interpretation: Side effects are predominantly gastrointestinal, consistent with GLP-1 class pharmacology. Zero patients discontinued due to intolerance. The 58% bowel habit change rate is lower than the 65–75% seen at standard doses in SURMOUNT-1 and STEP-1 trials, providing preliminary support for the tolerability advantage of microdose titration.

Key finding: Zero discontinuations due to side effects. 71% of reported effects were minor. Tolerability compares favourably with published standard-dose trial data (nausea-driven discontinuation 4.5–7% in SURMOUNT-1 and STEP-1).

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